

4.3.4.1.10 Waste Management

This section summarizes the waste management impacts for the construction and operation of a vitrification facility. There is no spent nuclear fuel or HLW associated with the operation of the vitrification facility; however, the facility does generate as its product output a glass log. The vitrification facility would provide interim storage of the glass log until entry into the Federal Waste Management System for final disposition. Table 4.3.4.1.10-1 provides the estimated operational waste volumes projected to be generated at the sites analyzed as a result of the vitrification facility. Facilities that would support the vitrification facility would treat and package all waste generated into forms that would enable long-term storage and/or disposal in accordance with the regulatory requirements of RCRA and other applicable statutes. Depending in part on decisions in waste-type-specific RODs for the Waste Management PEIS wastes could be treated, and depending on the type of waste, disposed of onsite or at regionalized or centralized DOE sites. For the purposes of analyses only, this PEIS assumes that TRU and mixed TRU waste would be treated on-site to the current planning-basis WIPP WAC, and shipped to WIPP for disposal. This PEIS also assumes that LLW, mixed LLW, hazardous, and nonhazardous waste would be treated and disposed of in accordance with current site practice. The incremental waste volumes generated from the vitrification facility and the resultant waste effluent used for the waste impact analysis can be found in Section E.3.3.4. A detailed description of the waste management activities that would be required to support the vitrification facility can also be found in Section E.3.3.4.

Construction and operation of a vitrification facility would impact existing waste management activities at each of the sites analyzed by increasing the generation of TRU, low-level, mixed, hazardous, and nonhazardous wastes. Wastes generated during construction would consist of wastewater, and solid nonhazardous and hazardous wastes. The nonhazardous waste would be disposed of as part of the construction project by the contractor and the hazardous waste would be shipped to commercial RCRA-permitted treatment and disposal facilities. No soil contaminated with hazardous or radioactive constituents is expected to be generated during construction. However, if any contaminated soil is generated it would be managed in accordance with site practice and all applicable Federal and State regulations.

Approximately 99 m³ (130 yd³) of solid TRU waste consisting of job-control waste (protective clothing and radiological survey waste), HEPA filters, resins, and sludge from liquid TRU waste treatment would require treatment and repackaging to meet the current planning-basis WIPP WAC or alternative treatment level. Hanford, INEL, and SRS have existing and planned TRU waste facilities that could be utilized. Due to their limited capability to process, package, and store TRU waste, a radwaste facility would need to be constructed as part of the vitrification facility if sited at ORR, Pantex, or NTS. A small quantity (0.7 m³ [0.9 yd³]) of solid mixed TRU waste would require treatment and packaging to meet the current planning-basis WIPP WAC or alternative treatment level. Mixed TRU waste would be generated if a TRU waste stream became contaminated with a hazardous waste constituent. To transport the TRU and mixed TRU waste to WIPP (depending on decisions made in the ROD associated with the supplemental EIS for the proposed continued phased development of WIPP for disposal of TRU waste), 12 additional truck shipments per year or, if applicable, 6 regular train shipments per year or 2 dedicated train shipments per year would be required. [Text deleted.]

All of the sites analyzed have existing or planned facilities that could manage the small quantities of LLW. Following treatment and volume reduction, approximately 14 m³ (18 yd³) of LLW from solidified liquid LLW, protective clothing, soil, and small equipment would require disposal. Using the land usage factors from Section E.1.4, the area required for LLW disposal would be 0.004 ha/yr (0.01 acre/yr) at Hanford and ORR, 0.002 ha/yr (0.006 acre/yr) at NTS and INEL, and 0.002 ha/yr (0.004 acre/yr) at SRS. With no onsite LLW disposal capability, Pantex would require one additional LLW shipment per year to NTS. The ultimate disposal of LLW will be in accordance with the ROD(s) from the Waste Management PEIS.

A small quantity (0.15 m³ [0.2 yd³]) of solid mixed LLW consisting of contaminated solvent rags and equipment that has been contaminated with both radioactive and hazardous constituents would require treatment to meet the land disposal restrictions of RCRA. Mixed LLW would be managed in accordance with the Tri-Party

Table 4.3.4.1.10-1. Estimated Annual Generated Waste Volumes for the Vitrification Alternative^a

Category	New Facility (m ³)	Hanford	NTS	INEL	Pantex	ORR	SRS
		No Action (m ³)	No Action (m ³)	No Action (m ³)	No Action (m ³)	No Action (m ³)	No Action (m ³)
Transuranic							
Liquid	0.8 ^b	None	None	None	None	None	None
Solid	99	271	None	3.5	None	119	338
Mixed Transuranic							
Liquid	0	None	None	None	None	None	None
Solid	0.7	98	None	Included in TRU	None	None	Included in TRU
Low-Level							
Liquid	7 ^b	None	Dependent on restoration activities	None	8	2,970	74,000
Solid	14	3,390	15,000	7,200	32	7,320	16,400
Mixed Low-Level							
Liquid	0	3,760	None	4	4	87,600	1,330
Solid	0.15	1,505	50	170	46	432	7,700
Hazardous							
Liquid	19	Included in solid	Included in solid	Included in solid	2	6,460	1,260
Solid	19	560	212	1,200	31	26	15,100
Nonhazardous (Sanitary)							
Liquid	34,000	414,000	Not reported separately, included in solid	Not reported separately, included in solid	141,000	550,000	703,000
Solid	920	5,107	2,120	52,000	339	53,100	61,200
Nonhazardous (Other)							
Liquid	269,000	Included in sanitary	Included in sanitary	None	Included in sanitary	650,000	Included in sanitary
Solid	15 ^c	Included in sanitary	76,500	Included in sanitary	Included in sanitary	321	Included in sanitary

^a The No Action volumes are from Tables 4.2.1.10-1, 4.2.2.10-1, 4.2.3.10-1, 4.2.4.10-1, 4.2.5.10-1, and 4.2.6.10-1. Incremental waste generation volumes for vitrification facility are from Table E.3.3.4-1. Waste effluent volumes (that is, after treatment and volume reduction) that are used in the narrative description of the impacts are also provided in Table E.3.3.4-1.

^b Liquid TRU and LLW would be treated and solidified prior to disposal.

^c Recyclable wastes.

Agreement for Hanford or the respective site treatment plan that was developed to comply with the *Federal Facility Compliance Act* for the remainder of the sites analyzed.

An estimated 19 m³ (5,000 gals) of liquid and 19 m³ (25 yd³) of solid hazardous wastes would be generated annually. Hazardous waste would consist primarily of analytical solutions and solvent rags contaminated with methylene chloride, acetonitrile, and acetone. Other hazardous wastes would include paint solvents, various laboratory chemicals, and organic waste from nonradioactive testing. Hazardous waste would be staged in RCRA-permitted facilities until sufficient quantity accumulated to warrant shipment to a RCRA-permitted treatment and disposal facility.

Approximately 34,000 m³ (9 million gal) of liquid nonhazardous sanitary and industrial wastewater and 269,000 m³ (71 million gal) of steam plant blowdown, process wastewater, and estimated stormwater runoff would require treatment in accordance with site practice and discharge permits. Construction of sanitary, utility, and process wastewater treatment systems may be required for some of the DOE sites. For the Preferred Alternative, construction of sanitary, utility, and process wastewater treatment systems may not be required because approximately 30 percent of the surplus Pu would be vitrified. The construction of these treatment systems would be determined in further tiered NEPA documentation. The 920 m³ (1,200 yd³) of solid nonhazardous waste such as paper, glass, discarded office material, and cafeteria waste that is not recycled or salvageable would be shipped to an onsite or offsite landfill in accordance with site-specific practice.